

**REMARKS**

In the July 27, 2004 Office Action, the Examiner:

- Rejected claim 3 under 35 U.S.C. 112, second paragraph, as being indefinite;
- Rejected claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by *Nilsson et al.* ("Nilsson", U.S. Pat. No. 3,765,381);
- Rejected claim 3 under 35 U.S.C. 103(a) as unpatentable over *Nilsson*.

***Claim Rejections - 35 U.S.C. § 112***

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Examiner states that the phrase "can be" is vague and indefinite.

Applicants have amended claim 3 to remove any ambiguity. Accordingly, it is respectfully submitted that the Examiner's 35 U.S.C. 112 rejections have been addressed.

***Claim Rejections - 35 U.S.C. § 102***

The Examiner has rejected claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by *Nilsson*. For a proper showing that these claims are anticipated by *Nilsson*, all elements of each rejected claim must be disclosed in the cited reference. The rejected claims contain one independent claims, namely claim 1.

Independent claim 1 has been amended to clarify that the fuel-air mixture of the combustion chamber is sucked into the auxiliary combustion chamber and only discharged from the auxiliary chamber into the main combustion chamber once combustion has commenced within the main chamber. This is completely unlike *Nilsson*, which discloses first introducing fuel into the fuel chamber 5 and then during the compression stroke allowing compressed air from the cylinder into the fuel chamber 5 for mixing with the fuel and for ejecting the mixture into the combustion chamber for ignition.<sup>1</sup> At no time is a fuel-air mixture sucked into the auxiliary combustion chamber and then only discharged during combustion, i.e., during the explosion stroke. In fact, the function of the device disclosed by *Nilsson* is to introduce fuel into a cylinder during a compression stroke for regular combustion, whereas the function of the present invention is to introduce an auxiliary fuel-air

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<sup>1</sup> See *Nilsson* col. 1, lines 45-60.

mixture into the combustion chamber during an explosion stroke to cause secondary combustion, thereby decreasing the fluctuation of rotational force at the crankshaft.

In light of the above, it is respectfully submitted that Nilsson does not disclose, teach, or suggest all of the limitations of independent claim 1. Accordingly, Nilsson cannot anticipate independent claim 1 or any of the claims that depend therefrom.

### ***Claim Rejections - 35 U.S.C. § 103***

The Examiner has rejected claim 3 under 35 U.S.C. 103(a) as unpatentable over Nilsson. To establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations.<sup>2</sup>

The Examiner states that the only difference between the prior art and the instant invention is the duration of the valve opening, and that such a duration would have been obvious. In light of the above amendments Nilsson does not disclose, teach or suggest all of the limitations of independent claim 1. Therefore Nilsson cannot render dependant claim 3 obvious, as dependant claim 3 includes all the limitations of its base claim 1.

In any event, Applicants respectfully disagree with the Examiner's contentions. It is the timing and not merely the duration of the operation of the auxiliary combustion chamber valve that allows this invention to introduce an auxiliary fuel-air mixture into the combustion chamber during an explosion stroke. This causes a secondary combustion that decreases the fluctuation of rotational force at the crankshaft. Again, this is completely unlike Nilsson which simply introduces fuel into a cylinder during a compression stroke.

### ***New Claims***

New claims 4-9 have been added. No new matter has been added. New independent claim 4 includes the limitation that the auxiliary combustion chamber valve discharges a fuel-air mixture into the main combustion chamber only once the primary combustion has commenced within the main chamber. This introduction of the fuel-air mixture from the auxiliary combustion chamber causes a secondary combustion within at least the main combustion chamber. As presented above, *Nilsson* does not disclose such a limitation.

### ***CONCLUSION***

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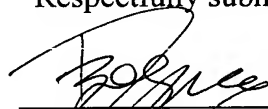
<sup>2</sup> *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In view of the foregoing, it is respectfully submitted that the application is now in a condition for allowance. However, should the Examiner believe that the claims are not in condition for allowance, the Applicant requests that the Examiner call the undersigned attorney at 650-43-7519 to set up an interview.

If there are any fees or credits due in connection with the filing of this Amendment, including any fees required for an Extension of Time under 37 C.F.R. Section 1.136, authorization is given to charge any necessary fees to our Deposit Account No. 50-0310 (order No. 060945-0158-US). A copy of this sheet is enclosed for such purpose.

Respectfully submitted,

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